



Current Capabilities, Issues, and Trends in LMSs & Authoring Tools

**Peter Berking
Dr. Keysha Gamor
Kent Weeks**

ADL Co-Lab

08/18/2009

**Vendor citations or descriptions are for
illustrative purposes only
and are NOT an endorsement by ADL**



Purpose & Scope

- Present and discuss **high-level** capabilities, issues, and trends
- **Functionality-related** issues and trends, not business-related





Authoring Tools



Functional Areas/ Issues - 1

- Training types supported
- Media types supported
- Interactivity level supported
- Author skill set requirements
- Output file format
- Standards compliance (e.g., SCORM)
- Collaborative authoring
- Flexibility of licensing agreement and associated support/training contracts
- Attainability of system requirements for authors and learners
- Optimization for reusability



SCORM 2004 Support Requirements

- The authoring tool should
 - Support object-based learning design
 - Allow SCOs to be defined at any level
 - Support incorporation of all SCORM data model elements
 - Enable metadata tagging
 - Allow definition of sequencing and navigation rules via
 - Sequencing templates
OR
 - Interface allowing selection of sequencing rule operators
 - Create SCORM 2004-compliant content packages (ideally SCORM 2004 4th Edition)





Ensuring SCORM 2004 Viability

- Test sample SCO produced by authoring tool through SCORM Test Suite
- View sample content on your target course delivery system to ensure it functions as intended
- View SCORM Certified Products and SCORM Adopters lists on the ADL Web site under “What We Do” then “SCORM” <http://www.ADLNet.gov/>
(currently being updated)



- “Organization-aware”, team-based life cycle production and maintenance
- XML output
- Separation of content and appearance
- Complex and numerous templates and skins
- Automated metadata generation/extraction
- Learning object-centric architecture
- Embedded best-practice design principles
- Support for immersive learning technologies
- Support for social media



LMSs



LMS Functionality is Defined by Type of Learning

- Learner-led
 - LMS
 - LCMS
- Facilitated
 - Content management system (CMS)
- Instructor-led
 - Virtual learning environment (VLE) aka virtual classroom
- Embedded
 - LMS



Functional Areas/ Issues

- Training workflow
- Delivery
- Assessment
- Collaborative learning options
- Open architecture
- Competencies, curricula, and learning tracks
- Reports
- Ease of administration

- SCORM-certified LMSs
 - Currently 29 @ 3rd Edition
 - View list on www.ADLNet.gov
- SCORM certification process being revised
 - Revalidation across product lifecycle
 - Align with ISO certification standard
 - New challenge and decertification processes
 - Details coming soon

- Interoperable assessment authoring (using cmi.interactions)
- Team-based learning
- Services/component architecture
- Functionality creep, for example:
 - Authoring
 - KM
- Third party application integration
- Support for multi-byte fonts

- Optimization for specific pedagogical principles and best practices
- Movement from proprietary database back-end or MySQL to Open Database Alliance

- Users demand social software as part of learning toolkit
- LMSs incorporate social software in a variety of ways
- For ideas on what may be in store for LMSs and Social Media, visit:
 - www.brandonhall.com
 - www.astd.org
 - www.gartner.com
 - www.socialmediatoday.edu
 - www.socialmedia.com

Trends - 3 (continued)

Five LMSs Commonly Used in the Federal Government and Social Media Integration

LMS	LMS Description	Sample List of Integrated Social Media	Purpose	Supports SCORM	VW Integration	Perceived Industry Challenges
Meridian KSI	<ul style="list-style-type: none"> Meridian KSI 	<ul style="list-style-type: none"> Online communities Blogs 	<ul style="list-style-type: none"> “Learning First” approach Traditional LMS Facilitate Communities of Practice 	Yes	<ul style="list-style-type: none"> None Listed 	<ul style="list-style-type: none"> Serious Use Perceptions
OutStart	<ul style="list-style-type: none"> TrainingEdge.com Talent Management 	<ul style="list-style-type: none"> Communities Blogs Wikis MS Office Email 	<ul style="list-style-type: none"> Informal Learning Enabled Talent Management 	Yes	<ul style="list-style-type: none"> Recommends AICC’s e-learning standards to weave VW software into fabric of learning content Using a ‘simulations and gaming’ paradigm 	<ul style="list-style-type: none"> Lifecycle Management Issues Tracking
Plateau	<ul style="list-style-type: none"> Talent Management Performance, compensation, career & succession Learning Management 	<ul style="list-style-type: none"> Available through Virtual Learning System Multimedia content Application demos VOIP Real-time Collaboration technologies from Adobe Connect Pro, WebEx, LiveMeeting, & Centra 	<ul style="list-style-type: none"> Talent Management Learning Management 	Yes	<ul style="list-style-type: none"> None Listed 	<ul style="list-style-type: none"> Integration Timely accessibility to information

Sources:

http://www.usalearning.gov/USAlearning/service_golearn.htm

<http://www.brandon-hall.com>

Trends - 3 (continued)

Five LMSs Commonly Used in the Federal Government and Social Media Integration (continued)

LMS	LMS Description	Sample List of Integrated Social Media	Purpose	Supports SCORM	VW Integration	Perceived Industry Challenges
Saba	<ul style="list-style-type: none"> • Saba • Saba Centra (Collaborative) • Saba Social (Enterprise Social Networking/Productivity Solution) 	<ul style="list-style-type: none"> • Wiki • Communities of Practice • User-generated content capture and exchange • Discussion forums • RSS • Search-based learning • Real-time Collaborative capability (web-conferencing, e-meetings, & virtual classes) 	<ul style="list-style-type: none"> • Learning Management • Talent Management 	Yes	<ul style="list-style-type: none"> • None Listed 	<ul style="list-style-type: none"> • Organizational Control (culture) • Quality/Accuracy
SumTotal	<ul style="list-style-type: none"> • Total LMS • Total Access (Empower Mobile or offline workforce) 	<ul style="list-style-type: none"> • Collaborative Web 2.0 Learning solutions • Online Communities • Discussion forums • Mobile access • Integration with SkillSoft, WebEx™, Interwise® and Centra® • Capture and categorize virtual events for use as job aids or information modules 	<ul style="list-style-type: none"> • Learning Management • Talent Management 	Yes	<ul style="list-style-type: none"> • None Listed 	<ul style="list-style-type: none"> • Organizational Control (culture) • Quality/Accuracy

Sources:

http://www.usalearning.gov/USALearning/service_golearn.htm

<http://www.brandon-hall.com>

- Users want to access functionality of LMSs and VWs in one tool
- VWs incorporate LMS functionality in a variety of ways
- For ideas on what may be in store for LMSs and VWs, visit:
 - www.brandonhall.com
 - www.virtualworldsreview.com/
 - www.sl-educationblog.org/
 - www.educause.com
- Info presented on next slide is in no way exhaustive

Trends - 4 (continued)

Five VWs Commonly Used in the Federal Government and LMS Integration

VW	VW Description	Social Media-Type Functionality	Purpose	Perceived Challenges
ECS Nexus	<ul style="list-style-type: none"> • 3D environment • Avatar-based, interactive meeting environments • Massive Multi-User Online Environment (MMOE) • Communicates with LMS 	<ul style="list-style-type: none"> • Voice Over Internet Protocol (VOIP) • Text chat • Instant Messaging • Buddy lists • Event scheduling and management 	<ul style="list-style-type: none"> • Commercial collaboration & training • Government collaboration & training 	<ul style="list-style-type: none"> • Tracking • Adoption • New Pedagogies
Forterra	<ul style="list-style-type: none"> • 3D environment • Avatar • Collaborative Meetings • Training & Learning • Events • Specialized Applications • Communicates with LMS 	<ul style="list-style-type: none"> • High-quality Audio • Enables embedded links within avatars or 3D objects to launch your social networking sites, profiles, blogs, wikis, or content repositories • Includes web-based modules to help you build communities and facilitate relationships between users • Record & Play • Documentation and Application Sharing • Lotus SameTime Plug-In 	<ul style="list-style-type: none"> • Commercial collaboration & training • Government collaboration & training • Higher Education collaboration & training 	<ul style="list-style-type: none"> • Metrics • Integration
Protosphere	<ul style="list-style-type: none"> • 3D environment • Avatar • Secure Communication • Built-in Social Network • Communicates with LMS 	<ul style="list-style-type: none"> • Application sharing • Voice over IP (VoIP) • Text chat • Video broadcasting facilities • Blogs • Wikis • Create groups & Communities • Document and file sharing 	<ul style="list-style-type: none"> • Commercial collaboration & training • Government collaboration & training • Higher Education collaboration & training 	<ul style="list-style-type: none"> • Integration • Tracking • Perceptions

Sources: Information gleaned from vendor web sites, conference presentations, workshops, and discussions.

Trends - 4 (continued)

Five VWs Commonly Used in the Federal Government and LMS Integration (continued)

VW	VW Description	Social Media-Type Functionality	Purpose	Perceived Challenges
Qwaq	<ul style="list-style-type: none"> Scalable architecture Secure, flexible, and extensible Software as a Service (SaaS) Qwaq Multi-Share Built-in data encryption Open standards • Communicates with LMS 	<ul style="list-style-type: none"> 2-D and 3-D graphics Data, voice and video integration, Whiteboards, post-it notes, and text notepads Document and file sharing Live Internet 'in-world' Presentation venues 	<ul style="list-style-type: none"> Commercial collaboration & training Government collaboration & training 	<ul style="list-style-type: none"> Learning Curve Tracking Integration
SecondLife	<ul style="list-style-type: none"> In-world commerce APIs to customize desired capabilities/features Service metrics Open source* • Communicates with LMS* (SLOODLE) 	<ul style="list-style-type: none"> 3D Chat (text and VOIP) In-world photo taking and sharing User-created content Presentation capabilities Communities & events HTTP Request 	<ul style="list-style-type: none"> Social collaboration Multi-sector marketing, training & education 	<ul style="list-style-type: none"> Tracking Security Interoperability
Vastpark	<ul style="list-style-type: none"> Not a single virtual world. Instead, it provides free software tools, APIs and open source libraries so you can deploy (and even monetize) your own virtual worlds and add-ons • Communicates with LMS 	<ul style="list-style-type: none"> Support virtual conferencing and training applications, immersive visualization of products, data, business processes, architecture, gameplay and 3D multiuser environments 	<ul style="list-style-type: none"> Commercial collaboration & training Government collaboration & training Higher Education collaboration & training 	<ul style="list-style-type: none"> Integration Tracking



Resources



- ADL Initiative
 - <http://www.ADLNet.gov/>
- Industry surveys, product comparisons, reports, buyers guides
 - Bersin & Associates
<http://www.bersin.com/>
 - Brandon-Hall
<http://www.brandon-hall.com/>
 - E-learning Guild
<http://www.elearningguild.com/>
 - Training Media Review
<http://www.tmreview.com/>

- “Choosing Authoring Tools” paper and presentation
 1. Go to:
<http://www.adlnet.gov/Technologies/Lab/default.aspx>
 2. See link in **Announcements** section on right side of page
- “Choosing an LMS” paper and presentation in progress



Questions or Comments?

Peter Berking

peter.berking.ctr@adlnet.gov

Dr. Keysha Gamor

keysha.gamor.ctr@adlnet.gov

Kent Weeks

kent.weeks.ctr@adlnet.gov